312 and from all the subterranean flows; thus it is richer in watering places. There are rédir, or wells, varying from 5 to 10 meters in depth.

342 The tent. -- This kind of habitation is found from the western Asian steppes to the Atlantic, where nomads have generally adopted the camel's-hair tent. Tuareg, who do not own any camels with long hair, use skins.

[281] The tent is composed of a large awning formed by assembling 30 to 40 wild-sheep or goat hides, with the hair removed and tanned. Because of the scarcity of wild-sheep skins, goatskin and even cow-
[184] hide are gradually being substituted for them. Cowhide is used exclusively by the Ioullimmiden Tuareg. The awning is held up by a frame of arches or poles. The Kel Ahaggar, moreover, have two kinds of tents: one with vertical supports and one with arches. The former is more widespread at the present time. It includes a central pole with a wooden ridge tile and six secondary poles placed in a circle. The highest part of the awning is about 1.5 meters from the ground. The edges of the skin hang down almost level with the ground where they are attached by small pegs in order to keep out the sandstorms which are very common in spring and summer, and keep out the winter cold.

The ridge tile on a central pole is especially used in summer when rains are feared, for it gives the proper slope to the awning so that water can flow off. In other seasons this ridge tile is replaced by two poles supporting a crosspiece.

Although one cannot stand inside, the Tuareg tent is spacious
323 enough. The poles are in tamarisk wood, with coarse sculpture,
531] pyrography, and paintings on the upper part. /224/ This type of tent is used by the Kel Rela, the Dag Rali, and most of the Kel Ahaggar.

[184] The other model is now used only among the Ahaggar-en-Tehlé. It appears that the Kel Ahnet and the Kel In Rhar may still use it, too. The center stake of the type described above is replaced by one or two arches made of éthel /atle? Ed./ roots joined by a

If, secondly, we look for the aptitudes which the Tuareg have for working these different raw materials, we notice that their enumeration follows the same order as above, with the reservation that none of them know how to work metals. The latter occupations are the prerogative of the Enaden, that is to say, the artisans, and it is evident from this that without the artisans' help Tuareg industry would be limited to work in wood, leather, and esparto. In short, it is the cultural cycle of the pastoral peoples of the steppe.

It is only much later, when the Tuareg had integrated the Enaden with their social organization, that they used metals. Therefore, we perceive the considerable role which artisans must have played in technical evolution and that of art itself.

Fig. 46. Wooden funnel.

/277/ The presence of Enaden in the camps has reduced the manual labor of the Tuareg, but the latter are still able to make wooden articles -- milking vessels, bowls, tent stakes, etc.

One of their most curious customs is that women from the high nobility work wooden vessels and funnels with their hands by means of a little adze. They usually give them to the wives of their Imrad, who are very appreciative of these gifts. In the Ahaggar camps we found many little utensils which were the work of famous noble-women, of taménokalin whose names are piously kept; these objects were saved with much veneration. This custom is even more remarkable since we know the scorn that the Tuareg have for manual labor; we must see in it a relic of woodworking which must formerly have been everyone's work, without distinction, before the creation of the artisan class.

Wood furnishes containers for food, drinking vessels, milking vessels, mortars, pestles, tent stakes, crosspieces and boards for making saddles. The Ahaggar does not have more than five or six species of woods which can be worked, and the articles, very simply shaped, are much less varied than in the Sudanese tribes.

All Ahaggar women, noble or vassal, know how to tan, remove hair from, sew, decorate, and embroider leather. They are able to make a waterskin needed to carry water, prepare skins to make tents, and manufacture bags for transporting food and personal objects. They have all become so expert in these labors that it is

Fig. 47. Amoula, a little wooden "bottle" for young children to drink from.

difficult to find any other peoples in the world who possess such a developed leather craft.

The scarcity of vegetable materials in the Ahaggar is one of the reasons why the use of esparto is relatively restricted. Only the stems of a graminacea common in the wadies (Panicum turgidum) are used to make mats -- large enclosing mats which surround the tent, sleeping mats, mats for covering plates.

/278/ The stems are bound by little leather thongs, and the combination of graminacea and leather is extremely effective; it allows very regular geometric decorations at the same time as a very solid work.

There are no esparto vans among the Tuareg. The women use palm-leaf vans and hats, but these articles are the work of the Harratin from the little palm groves of Silet, Ideles, and Abalessa.

283 Spinning is done by all Tuareg women. They spin the hair of the
462 goat, the camel, and the wild sheep, making very solid cords and saddle girths.

286 Weaving is limited to the making of goat's-hair, or more rarely camel's-hair, bags. This is a very primitive technique which does not require any loom and which is, furthermore, in the process of disappearing from the Ahaggar, where only a few noblewomen still practice it. It is completely extinct in Sudanese tribes.

324 Stonework, a relic of Neolithism, was still carried on in the Ahaggar
438 a few years ago to make arm rings. Layers of granitoid schists were formerly worked
[415 at Aseksem and Terahart in the Tafedest. We also found
322] an ancient workshop south of Silet on the banks of the Tamanrasset wadi. Today all stone bracelets come from Air and a few from Hombori, where they are manufactured by Tuareg or Hausa artisans.

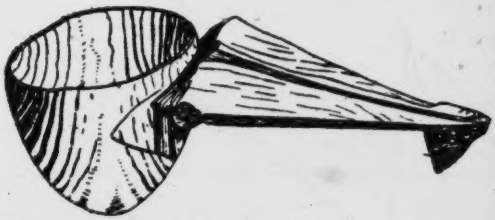

Fig. 48. Tabarekkat wooden ladle, also serving as a drinking vessel.

326 Metalworking is exclusively in the hands of the Enaden, who transform
[56] silver, copper, and iron. These materials, with the exception of iron,
[135] do not exist in a native, workable state in the Ahaggar. But although iron ore is common /279/ in some volcanic rocks of their country, the Tuareg do not have it exploited, for it is found in such small particles that it necessitates a disproportionate amount of forge work for the quantity likely to be recovered. Nevertheless, the memory of casting ore still remains among the Enaden. They use several forges at once, but do not know
[439] the blast furnace. The caravaneers coming from the north or from the Sudan used to bring metals.

177 At the present time silver comes from coins which are melted. For
326 years the Tuareg have had Maria Theresa dollars at their disposal; these

439 These transactions are chiefly centered around tea, sugar, cloth, perfumes, hardware, carbide, and blankets from the Touat. They cause quite an appreciable movement of camels from which the Ihaggaren benefit, along with the Arabs from In-Salah who rent their camels to traders.

492 Transport. -- We need not repeat that without the camel the Sahara would be uninhabited today. Indeed, it plays a capital role in transport between oases; it is the mount used by warriors and people who are moving and the vehicle for baggage. People would not be able to do without its services the moment it is a question of crossing a hundred or so kilometers in a region not supplied with watering places.

The ass also plays a big role, but its use is more localized. [312] It is confined to the edges of the massif, where it is rare not to find water during a day's march. The ass really assures all internal transport -- that necessitated by moving camps, transport of water [565] and even of persons -- for although the Imochar never travel except on camels, the Imrad /318/ commonly make use of the ass, and their wives know no other mounts. Its role is even more appreciated because it saves camels which, in the Ahaggar, must be submitted /only/ to moderate labor. In addition, it is always handy, for it lives near the camps while camels are often several days' march away because of pasture needs.

Meharists have a special harness: light saddles which are placed on the animal's withers and which are designed to receive the different bags of salt and waterskins.

The Ahaggar Tuareg have several kinds of saddles: 1) the tarik, with the pommel in the shape of a cross and covered with [281] red leather; 2) the tamzak, shaped the same way, but much more [531] luxurious, with the outside of the pommel and the back decorated with little perforated metal plates and copper studs; 3) the tahiast, [531] a coarse saddle with a palette-shaped pommel, either in bare wood [322] or covered with leather decorated with geometric designs.

492 adopted by all the Tuareg of the Ádrar des Iforas, which the
171 Chaamba Arabs also use, and which is derived from the saddle of the Moors of the western Sahara.

492 Ahaggar noblewomen, who travel only on meharis, have
[565] special saddles resembling the basour of the Arabs but without the arch covered in cloth. These saddles are called akhaoui; they
[322] are made /319/ of wood and ornamented with large pommels in front and small plaques trimmed with copper nailheads on the side.
[531] For long moves these saddles can be provided with a wicker cage covered with cloth, but this is not a common practice.

Saddles hold leather bags which contain either a change of
[415] clothes or food reserves as well as the waterskins constituting the necessary provision for crossing regions without wells.

For transport, camels are provided with a special packsaddle made of palm fibers which literally crowns their backbone. Most of these packsaddles are made in the Tidikelt. For caravans which last a long time the animals are loaded with about 100 kilograms, plus the waterskins that are generally added to the baggage. The servants, who accompany the animals and do not have personal mounts at their disposal, /320/ ride on top as excess weight and make the whole trip under these conditions.

[481] The Tuareg are very poor walkers and cannot conceive of a person's going on foot, even to spare the mount for a few kilometers.

Asses, which as we have said are used for transport within the massif, are provided with a little packsaddle serving as a saddle at the same time. When camp is moved, they are loaded with the tent, tent stakes, and bags containing food reserves. They also
[312] assure the carrying of water from the well to camp.

484 When an Amrid travels alone on a voyage, he takes an ass to
492 carry his water, his small baggage, and his blanket. Pushing the
[481] ass before him, he walks behind carrying his lance over his shoulders. He mounts on it only during the hot hours of the day.

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[322]

Fig. 21 a–b. Milk-bowls (*akas*, pl. *ikassen*) which are used for milking and for milk drinking.

[184] a. A bowl made of burned clay like an ordinary earthen pot. These bowls are never used by pastoral Tuareg but by a few sedentary agriculturists of Ahaggar who also manufacture them. Ahaggar, Tamanrasset. Dimension: 0.120 m high with an upper diameter of 0.187 m. (N.M. G. 5821).

[824] [463] [184] b. A bowl cut of the wood of the *tabarekkat* tamarisk (*Tamarix aphylla*). It is made by a blacksmith, but certain Tuareg women cut similar bowls which are common in all camps of pastoral Northern Tuareg. Such milk-bowls are unknown among the Ayr Tuareg. Ahaggar, the *Aguh-en-tehlé* tribe. Dimension: 0.102 m high with an upper diameter of 0.199 m. (N.M. G. 5199).

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Fig. 22. Calabash of a type which is used occasionally for milking in Ahaggar. It is called *ateklas* (*wa n aki*) or *ateklas* (*wa n tazek*), that is "calabash for milk, or "calabash for milking". Introduced to Ahaggar from the south and bought at Tamanrasset. Dimension: 0.110 m high with an upper diameter of 0.195–0.203 m. (N.M. G. 5823).

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Fig. 37. Wooden milk-bowl (*akabar*) of the type used in Ayr not only for she-camels but also for cows, sheep, and goats. It is carved out of wood of the *tarza* tree (*tarha* in Ahaggar) (*Calotropis procera*) by a blacksmith. Ayr, the *Imezzureg* tribe. Dimension: 0.285 m high. (N.M. G. 6662).

[237]

Fig. 38. Wooden milk-bowl (*akabar*) of the type used for she-camels in Ahaggar. It was introduced to Ahaggar from the south where it was made by an Ayr blacksmith from wood of the *tarha* tree (*Calotropis procera*). The cracked brim is mended with a piece of raw camel hide. Ahaggar, the *Aghal-en-tekli* tribe. Dimension: 0.340 m high. (N.M. G. 5822).

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household goods during nomadic migrations, and are employed daily in all camps to carry water in skin-bags from wells and waterholes to the tents. They are very strong animals considering their low stature, and good pack-donkeys can carry up to one hundred kilograms even for very long trips. Donkeys are occasionally used for long journeys by the Northern Tuareg, and many Ayr Tuareg use them to fetch provisions of millet around Tanut in Damergu. Caravans of donkeys are frequently observed in these regions, and one even sees mixed caravans of donkeys and camels. There can be no doubt that before the introduction of the camel the donkey was still more important for riding and transportation than is the case nowadays. This is clearly demonstrated by historical material from Egypt and adjacent regions (cf. Erman 1922, p. 518 f., 529, 592 f., 636).

It has already been mentioned that donkey's meat and skin are not utilized nowadays by the Tuareg. The same is true of mare's milk which, however, is used as a remedy against a kind of cough known to the Ayr Tuareg as *khamkham*. There is no regulation of mating for donkeys which in many ways are semi-domesticated animals. In Ayr male donkeys are never castrated, while the Ahaggar Tuareg say they castrate such stallions as constantly run after the mares and in this way cause too much trouble. The Tuareg also have no methods to prevent foals from sucking, while a method of this kind is sometimes applied by sedentary people in and around Agadez. This method known as *éfinjar* consists in the cutting of the nostrils of half-grown foals so that they cannot suck pregnant mares. Both stallions and mares are used for riding and transportation, but female animals are much preferred for these purposes. Mares are used almost exclusively for the transportation of water-bags hanging under the animals, as the bags might be squirted by stallions' urine.

The Northern Tuareg saddle their donkeys, using the same saddle type for riding and for transportation (Fig. 86). This is known as *aruku* and is manufactured by the women in the following way:— Two fresh boughs of the *tahunek*-tree (*Rhus oxyacantha*) are heated, or slightly burned, over the fire. The boughs are thereupon barked and bent into the curved form wanted, and are then kept in this position by cords. After drying for a few days the boughs will retain their curved form, and the cords are untied. The boughs are then cut up and their ends are connected by two pieces of camel's hide soaked in water, and sewn together by means of a large iron needle (*tasugla*, or *tasubla*) (cf. Fig. 220b) and a thread which is also cut from camel's hide. The wooden saddle frame is attached to three cushions. These cushions are generally made of goat-skin or sheep-skin stuffed with hay or with date palm bast, but may also be plaited from leaves of the date palm tree. Cushions made from goat-skin are sewn together with strips of the same material by means of the little awl known as *tistent* (cf. Fig. 218a). The two long cushions resting lengthwise upon the animals back are known as *tastek*, and the small cushion resting over the animal's back close to its shoulders is called *tafelledut*. The saddle is fixed to the donkey by two girths consisting of cords made of goat-hair. One of these cords (*tidmechart*) passes under the tail, the other (*ahayif*) is tied around the chest of the animal. This saddle type is well fitted for the transportation of burdens and in particular of water-bags, the cords of which are attached to the pommels. When the saddle is used for riding it is frequently covered with a blanket or a piece of cloth. Saddles of this type are found in all camps of the Northern Tuareg, and Lhote states that they are also found in Adrar-n-Foras and in Ayr (Lhote 1947a, p. 120). This may be so but I have myself never seen them in the latter region where they are unknown to the *Kel Ferwan*

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433 439 in the Sudan for such articles as camel saddles, sandals, swords, millet mortars, indigo cotton, earthenware pots, and the like. The Tuareg may also buy quantities of butter and cheese for sale to the sedentary people of Tidikelt and for their own use in dry years.

The Sudanese trade constitutes the great stabilizing factor in the economy of pastoral Tuareg of [262] Ahaggar. In return for the valuable rock-salt, pastoral Tuareg obtain the bulk of their agricultural food products (millet), butter and cheese for their own consumption in dry years, many important artefacts and notably their camel saddles and their millet mortars. They also get a surplus of millet and goods for investment in their Ahaggar gardens and for selling to the sedentary people of the Tidikelt oases.

There are certain Tuareg who do not engage in the Sudanese salt trade, notably those living in Ahnet; and these Tuareg nowadays have no irrigated gardens either. They acquire their necessary vegetable food products from Tidikelt (dates) and from Abalessa and Tamanṛaset (wheat). They buy these vegetable products with their surplus of goats, sheep, camels, butter and cheese, and an occasional [511] barbary sheep. In a good year they can meet their needs of food in this way, but it is most difficult for them to subsist in dry years; and it may happen that two dry years come in succession. When I [114] stayed among the Ahnet Tuareg in 1954–55, all camps visited were very short of food, while the Tuareg of the Ahaggar Massif who engage much in the salt trade (the *Dag Rali* and the *Aguh-en-tehlé*) possessed what they needed of wheat, barley, dates, and millet.

[364] To-day there is a rather important market at Tamanṛaset where many Tuareg sell surplus livestock, [435] and where they can also buy cereals and dates. But it is always profitable to sell livestock and meat in the Tidikelt oases where meat, butter and cheese are very expensive articles. Dates are cheap in these 000 oases, European goods and woven blankets are also cheaper than at Tamanṛaset. The trading expedi-

804 322 177

Fig. 150. Wooden measure (*muda*) which contains one kilo of cereals, or the like. The Tuareg have adopted the kilogramme into their own weight system. The proper Tuareg unit is the *taẓiwa* which, according to Foucauld, corresponds to three kilogrammes (Foucauld 1951–52, III, p. 1160), but nowadays the Ahaggar Tuareg count one *taẓiwa* as equal to two kilogrammes and a half. The Tuareg have wooden or metal measures of *taẓiwa* size, and there are also larger measures to be used for grain, dates, and the like. For units smaller than *muda* the Tuareg sometimes use a wooden measure called *tamaḳast* which holds half a kilogramme. Smaller quantities are measured with the hand held half open, and it is recognized in Ahaggar that one *taẓiwa* corresponds to 99 handfuls. In Ayr it is very common to use a little plaited bowl (*téfakemt*) as the smallest unit of measurement. Dimension: 0.140 m high, 0.125 m in diameter at the rim. (F.M. 168).

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Fig. 153a–b. Tuareg funnels (*éssegeft*, pl. *issegefa*) which are used for milk, butter, and for other liquids.

a. Wooden funnel ornamented by burning. Made by blacksmiths. Ahaggar, the *Deg Ɣali* tribe. Dimension: 0.210 m high. (F.M. 240).

b. Funnel plaited from straw of *taleggit* (*Juncus maritimus*) with the rim reinforced with leather. Made by Tuareg woman. Ahaggar, the *Deg Ɣali* tribe. Dimension: 0.135 m high. (F.M. 243).

In Ahaggar the method of churning butter is as follows:— Milk of the morning yield is put into a skin bag (*émesesley*) (Figs. 156–157) to remain in this bag until next morning when churning takes place. During the hot season the *émesesley*, filled with milk, is placed in the shade of the tent in daytime, while in winter it is placed in sunshine, or close to the fire. Some milk of the evening yield is sometimes added to the morning milk in the *émesesley*. Before churning the milk thus soured is poured into the proper churning bag (*aɣiwir*, *tanwart*) which is inflated and shaken. Churning bags may vary in size; when there is little milk to be churned a little bag is used and shaking is done holding it in the hands (Fig. 158). When milk is very plentiful, butter is sometimes churned in larger bags (*anwar*), which at one end is attached to a pole, while shaking is done by pulling the other end of the bag with one or both hands. When the milk is shaken in this way it forms small white balls of butter which are removed from the churning bag with a wooden spoon (Fig. 191) when water has been added. This white butter (*udi wa mellen*, or *tesendut*) is occasionally used for food without further preparation, but this is not normal, for newly-churned butter is generally put into an earthen pot (*téɣirt*, or *ufrun*) (Figs. 186, 187a–b) together with parts of an annual plant known as *aymesnis* (*Chlamydophora pubescens*) (Fig. 160) to be heated over the fire. Some Tuareg also add meal of dried dates, or of horns of barbary sheep. After heating, butter (*udi*) assumes a dark yellow colour. It is stored in containers made of camel's hide (*tahattint*, *asaɣen*, *ayaññha*) (Figs. 161–162), or in Sudanese calabashes (*azem*) (Figs. 163a–b). A particular metal pail (*éɣir*) (Fig. 164) manufactured by native blacksmiths is also used for butter in Ahaggar,

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butter in Ahaggar, and butter reserved for greasing the hair is frequently kept in a large horn (*isek*) of barbary sheep (Fig. 165).

The Ayr Tuareg make butter (*wiji*) in much the same way as the Northern Tuareg. For churning they use a skin bag (*anwar*), or a calabash (*azenu*), and they say that they prefer skin bags in winter, and calabashes in the hot season. Butter is heated or boiled immediately after churning, but the Ayr Tuareg do not add parts of plants, date flour, or the like. In Ayr butter is not churned as regularly as in the north. It is used mainly for cooking meat of thin animals, for a sauce which may be used for millet porridge instead of milk (cf. p. 243 f.), and for greasing the hair. Among the Northern Tuareg butter is added to many different dishes and particularly to bread, which is eaten almost daily by many people. In years of drought the Ahaggar Tuareg get their butter from Ayr (cf. p. 212, 215), and the Ayr Tuareg make much butter for export in such circumstances. They churn most butter from cow's

Fig. 154a–c.

a. Wooden funnel. Made by blacksmiths. Ahaggar, the *Dag Ɣali* tribe. Dimension: 0.146 m high. (N.M. G. 5203).
b. Funnel consisting of a piece of calabash which derives from the south. Ahaggar, the *Dag Ɣali* tribe. Dimension: 0.131 m high. (N.M. G. 5202).
c. Wooden funnel with a strap of cord of goat's hair. Made by blacksmiths. Ahaggar, Olufsen's collection. Dimension: 0.175 m high. (N.M. G. 1.150).

All wooden funnels are cut from wood of the *tabarekkat* tamarisk (*Tamarix aphylla*).

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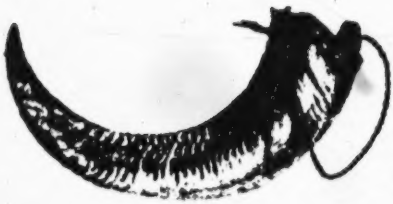

Fig. 165. Horn (*isrk*) of barbary sheep used for storing butter for greasing the hair. The opening is closed with a piece of date palm bast (*asan*), and the edge is pierced with a glowing awl (*ándel*) for the insertion of a cord of goat's hair by means of which the horn is attached to the tent ceiling. Ahaggar, the *Dag Ğali* tribe. Dimension: 0.30 m long. (F.M. 236).

the Tuareg in the past. I believe that they were made by blacksmiths or imported from the north. Pastoral Tuareg do not manufacture earthen pots which are obtained from sedentary people. The cooking of meat is perhaps not a traditional method of food preparation to the Tuareg, though they seem to have used cooking pots for centuries.

A method of meat preparation undoubtedly introduced recently among the Tuareg, is that of spit roasting. Meat roasted in this way is known as *mechwi*, a word of Arab origin, and the Northern Tuareg have taken over the method from the Arabs. The *mechwi* method is also known in Ayr, where it has perhaps been introduced by French administrators who had learned to appreciate meat thus prepared during their visits among Northern Tuareg and Arabs. Pieces of sheep and goats and entire animals are prepared in this way (Fig. 174), and the meat should preferably be prepared with butter and red pepper before roasting.

The traditional Tuareg roasting method is to place entire animals (goats, sheep), or parts of them, under the hot ashes of the fire. This method is known to the Northern Tuareg as *abatul*, to the Tuareg of Ayr as *ébewil* (Fig. 175). This method of roasting meat is practised everywhere among the Tuareg, and it is on the whole similar to the method used for bread-baking described below (p. 238 f.).

Meat-roasting in the ashes is no doubt an ancient Tuareg method of food-preparation, and this also holds good for another method described in connection with the preparation of milk, namely food preparation by means of hot stones (cf. p. 221). The Ahaggar Tuareg prepare the stomachs of goats, sheep, and barbary sheep in this way, putting hot stones into the stomachs, while camel stomachs are boiled in a cooking pot and gazelle stomachs roasted in the ashes according to the *abatul* method mentioned above. These rules of food preparation seem also to be practised by the Ayr Tuareg, who put hot stones into stomachs of sheep and goats together with small pieces of meat. A stomach of goats or sheep prepared in this way, however, is given a final treatment in hot sand or in ashes close to the fire. The stomach of sheep or goats cooked with hot stones is known as *tarafa*, and a related word seems to be known also in Ahaggar (cf. Foucauld 1951–52, IV, p. 1583).

The Tuareg eat most entrails of their slaughtered animals. Entrails of camels are normally boiled, and kidneys of all animals are prepared in this way. Most entrails of goats and sheep (liver, heart, and lungs) are roasted on the embers or in the ashes, and in Ayr the Tuareg roast fat put into the abomasum (*tedeṛant*). The Northern Tuareg generally prepare liver and fat together in the following manner:— The liver is roasted upon the embers, is thereupon cut into small pieces which are wrapped

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up with small strips of fat. The pieces of liver covered with fat are put on a slender iron or wooden rod to be roasted slightly over the fire. This dish is known to all Tuareg by the Arabic word *elmefid*. It was introduced among the Northern Tuareg by the Arabs, but is not widely known among the Ayr Tuareg.

This brief description of Tuareg meat preparation can adequately be supplemented by a reference to two peculiar dishes:— (1) A dish known to the Ahaggar Tuareg as *talebeggat*. It consists of meat which after boiling or roasting is pounded in a large mortar and frequently served with liquid butter. This dish is also known to the Ayr Tuareg. (2) A dish which is described from Ahaggar by Foucauld under the name *abangor*. It consists of untanned skin which is eaten in case of hunger after the following preparation:— Untanned skin from household implements, shields, and the like is roasted under the ashes, and is thereupon pounded into small pieces. These are eaten without any further preparation, or after boiling. (Foucauld 1951–52, I, p. 73).

Like other North African peoples the Tuareg dry meat of domestic animals and of game. The people of Ayr know three distinct drying methods, namely (1) *iwesan*, that is meat which is boiled until it is free of blood; it is dried in the shade; (2) *tikelsin*, uncooked meat cut into pieces to be dried on a string in the shade; (3) *kules*, uncooked meat cut into strips which are dried for some time to be treated with salt and various spices. This last method is not practised among the Tuareg of Ayr, but by sedentary people of Agadez and by Negroes further south in Damergu. The Ahaggar Tuareg generally boil or roast the meat before drying; meat roasted in the ashes according to the *abatul* method and thereupon dried is known as *takasa*. I do not know whether the Ahaggar Tuareg also practise the method of drying raw meat like the Ayr Tuareg, but the dried *agezzeram* lizzards which they take to Tidikelt on trading expeditions, are dried uncooked. Furthermore, the method of drying raw meat is known elsewhere in the Northern Sahara, and I have myself seen it practised among the Berber-speaking *Chawiya* of Aurès.

I conclude the description of Tuareg meat preparation with a brief note on the use of blood of living

Fig. 166. Wooden double-vessel (*azar*) to contain water and butter for greasing the hair. Similar containers with a third vessel for fine-grained sand are also found among the Tuareg. Made by blacksmith from wood of the *taborak* tree (*Balanites aegyptiaca*). Geometrical ornaments are produced by burning with a hot iron. Ahaggar, *Ahl Azzi* Arabs at Tamanrasset. Dimension: 0.241 m long. (N.M. G. 5880).

[text continues on p. 235]

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Fig. 203. Earthen incense jar (*elbokhkhar*). Ahaggar, *Harratin* at Abalessa. Dimension: 0.179 m high. (N.M. G. 5889).

512). Most pastoral Tuareg of Ayr get their pots from Agadez, but pots are also imported from the south where they are of superior quality. These pots are said to be manufactured by black-skinned *Igdalen* Tuareg (cf. p. 432) of the southlands, notably by people of the *Ikenawen* class which comprises professional pot-makers. These people are not found among the *Kel Ayr* but are common in camps of the *Kel Geres* where I have met them. They speak *tamachek* but also have their own language which is said to be related to *Songay*. The pots made by these southern people are painted and decorated (cf. Fig. 205) in contrast to those of Agadez which are plain and of very simple forms (Figs. 204a–b). So far as I am aware painted and decorated pottery is rarely manufactured in Ayr nowadays. But Rodd states that such pottery in the form of pitchers with a blue design is made near Agadez (Rodd 1926a, p. 160 f., pl. 22 p. 209), and when I investigated ruins of stone houses at Iferwan I found a great many sherds of finely-decorated painted pots which must have been used up to the end of the great Tuareg revolt in 1917 when these houses were destroyed by the French. Lhote has also mentioned the decline of pottery techniques in Ayr, and he states that, apart from little incense jars, no painted and decorated pots are manufactured at Agadez nowadays (Lhote 1950c, p. 511).

Certain metal receptacles were known to the Tuareg long before the European occupation, notably a cooking pot (*érir*) made from copper, and the flat drinking bowl (*tamennast*) made from tinned copper or brass in Tripolitania, or in Tunisia. Metal receptacles are also manufactured by native blacksmiths in Tuareg country, e.g., the pail (*érir*) to be used for liquid butter (Fig. 164).

The blacksmiths are excellent wood-workers and make most wooden domestic utensils used by pastoral Tuareg (Figs. 21b, 37, 38, 58, 60, 61, 62, 63a–b, 75, 150, 153–154, 166, 176, 177, 178, 191, 194, 195, 212a, 219a–b, 285). The main implements for wood working are axes and adzes (Figs. 206a–d).

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206a–d). The ordinary axe (*taḍeft*) is used by all Tuareg who may also possess small adzes (*tat-tawt*), used mainly by women for the manufacturing of domestic implements such as spoons and milking bowls. These implements manufactured by Tuareg women are generally inferior in quality to those made by the blacksmiths, though certain noble women of the *Kel Rela* tribe make wooden milking bowls that are said to be superior to those of the blacksmiths. In Ayr, Tuareg women engage very little in wood-working, and the Aʾyr Tuareg are on the whole less skilled in crafts than are the Tuareg of Ahaggar.

Pastoral Tuareg are experts in rope making. Ropes made from various materials play an important part for the Tuareg for hobbling domestic animals, for fastening burdens transported on camels, as reins, for the erection of tents, and for a great many other purposes. Incidentally the Tuareg make substitutes for ropes in a very simple way. Thus if a man comes upon a camel which he wishes to take back to camp and has no rope or rein to lead it by he makes a lead from three or four pieces of palm leaf, or the like, attached to each other. It is stated by Maire that the Ahaggar Tuareg make simple

Fig. 204a–b. Earthen pots made by the sedentary *Imeggedezen* of Agadez.

a. A water jar with two spouts. It is known to the Ayr Tuareg and the Hausa-speaking *Imeggedezen* as *gelgeleti*. It is used by the latter people but never by pastoral Tuareg. Dimension: 0.30 m high. (N.M. G. 6635).

b. Earthen jar used for water and also for cooking. It is known to the Ayr Tuareg as *téyint* or *ɛtekin*, to the Hausa-speaking *Imeggedezen* as *tokuniya* or *tulu*. Dimension: 0.285 m high. (N.M. G. 6634).

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Fig. 206a–d. Axe and adzes of the Ahaggar Tuareg.

a. The ordinary axe (*taḍeft*) which is found in all Tuareg camps. Ahaggar, the *Aɣuh-en-tehlé* tribe. Dimension: 0.572 m long; dimension of the iron blade: 0.157 m long, 0.053 m broad. (N.M. G. 5233).

b. *tettawt*, a small socket-shafted adze with knee-shaft. Adzes of this type are common in Tuareg camps. They are used mainly by women for wood-carving. Ahaggar, the *Aɣuh-en-tehlé* tribe. Dimension: 0.301 m long. (N.M. G. 5232). 322

c. *tikadimt*, adze shafted by means of a piece of sheet-iron and nails. Ahaggar, blacksmiths of Abalessa. Dimension: 0.440 m long; dimension of the iron blade: 0.150 m long, 0.058 m broad at the edge. (N.M. G. 5864).

d. *tikadimt*, slot-shafted adze. Ahaggar, blacksmiths of Tamanraset. Dimension: 0.430 m long; dimension of the iron blade: 0.222 m long, 0.065 m broad at the edge. (N.M. G. 5865).

The axe and the adzes are all made by blacksmiths. 564

The very best ropes or cords manufactured by the Ahaggar Tuareg are those made from goat's hair which is sheared with a knife by the women once a year in the hot season. These ropes are known to the Ahaggar Tuareg as *ihellumen* (sing. *ahellum*), while the proper term for a rope of goat's hair in Ayr is *azaw*. But the Ayr Tuareg do not make such ropes as they have goats of the short-haired breed (p. 33). They obtain their ropes from the Ahaggar Tuareg. Ropes of goat hair are manufactured by women by the following method:— The mass of hair, known as *éhafilen*, is placed upon a piece of skin and is prevented from blowing away by means of a stone. The hair is then taken out in small quantities with the first and second fingers of the left hand to be spun upon a stick 30–40 cms long.

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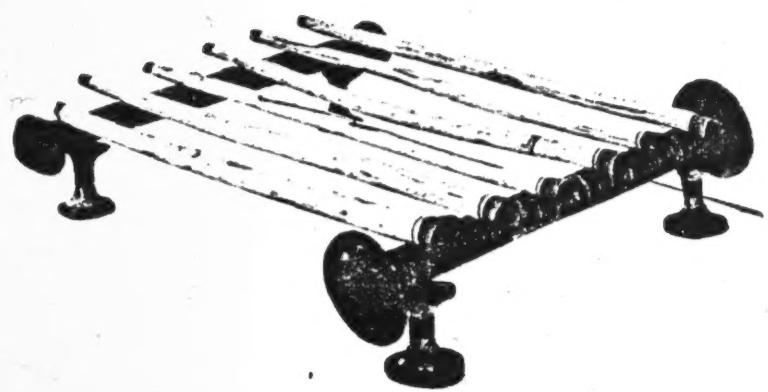

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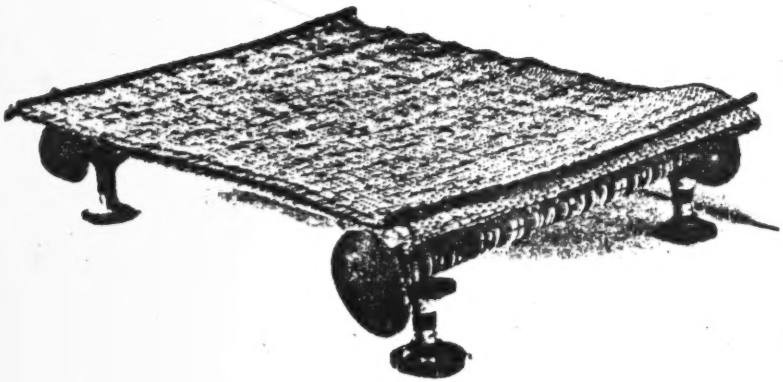

Fig. 212a–b. The large wooden bed (*tédabat*) which is used by all pastoral Ayr Tuareg.

a. The wooden skeleton consisting of the following parts:— (1) Four wooden legs (*téseikelt*, pl. *tiseikal*). (2) Two horizontal cross-beams (*tabatukat*, pl. *tibatukatin*) carved into the shape of a disc at their ends. (3) Six horizontal poles (*afasas*, pl. *ifesasen*) resting in shallow grooves of the horizontal cross-beams. These poles are made from wood of a tree called *koriya*, this type of wood is also used for the heavy cross-beam seen in the front, while the hindmost cross-beam is made of wood called *tereza*.

b. The wooden skeleton covered with two mats (*tésbert*, pl. *tisebrin*) of *afezu* grass (*Panicum turgidum*). The stems of this grass are tied together with leather strips. Beds are frequently covered with three mats. Dimension of the bed: ca. 1.70×1.36×0.21 m. (N.M. G. 6640a–o).

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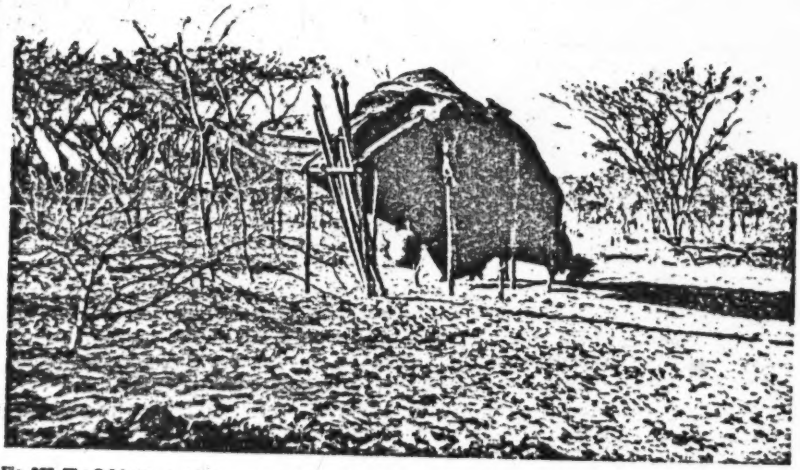

Fig. 277. The B.2.b.4 tent with three pairs of vertical forked sticks carrying three horizontal cross-bars in their prongs. Three semi-arches each of them being made of two slender rods are placed over the cross-bars at right angles. The carved poles leaning against one of the cross-bars constitute the main elements of a narrow wooden bed (*tédabut*). From a *Bélla* camp near Ayoru on the Niger.

I saw a few tents which had two or four longitudinal semi-arches, but three semi-arches were normal. 342* The structure of the tent inhabited by the chief *Amder* had the following dimensions:—

The central pair of vertical forked sticks with their cross-bar was about 1.30 m high, and the two outer pairs 0.20 m lower. The distance between the two sticks of the central pair was about 1.00 m, between the sticks of the two outer pairs about 0.70 m. The distance from the central pair of sticks to each of the two outer pairs was 1.50 to 2.00 m.

B.2.c. *Skin tents supported by cross-bars connected with horizontal sticks.*

B.2.c.1. It is uncertain whether the structure to be described forms a regular type, as I know it only from a photograph which is in the photographic collection of the Musée de l'homme in Paris (Collection Photographique, 42.811.301). However, this photograph, which is taken north-east of Kidal in Adṛaṛ of the Ifoṛas, has also been reproduced by Gjessing in his work on general ethnography (Gjessing 1953, II, p. 176–177). The photograph shows three Tuareg women erecting a tent structure as follows:— Two comparatively high forked poles carry a relatively short horizontal cross-bar which, judging from the photograph, measures less than a metre. A pair of exactly similar poles with

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*342 lection of the National Museum in Copenhagen. It belongs to the tent referred to under B.2.g.5 (p. 378 f.) (National Museum, G.I.1; cf. Feilberg 1944, p. 140) (cf. Fig. 282).

*From Ayr*:—

(5) A rather curved and heavy cross-bar 0.51 m long, and 0.12 m broad. At its middle there is a funnel-shaped thickening with a round hollow to support the central post. There are four rectangular holes at the corners for cord-attachment. This cross-bar comes from the *Kel Takriza* tribe which belongs to the *Ineslemen* class (Musée de l'homme, No. 41.19.333; cf. Lhote 1947a, Fig. 4 (2) p. 39, p. 118, photograph 50 p. 81).

*From the Kel Dennek*:—

(6) A rectangular slightly curved cross-bar having geometrical ornamentation on the inner side. At the middle of this there is a funnel-shaped thickening with a round hollow to support the central post, and four round holes for cord attachment at the corners. It is 0.55 m long, and bears geometrical ornamentation on the inner side (cf. Nicolas 1950a, pl. VIIIa p. 155).

(7) A slightly curved cross-bar with a square hollow at the middle to support the central post. The inner side has geometrical decoration, and there are four triangular holes for cord-attachment. It is 0.35 m long (Nicolas 1950a, pl. VIIIb p. 155).

(8) A rectangular slightly curved cross-bar with geometrical ornamentation on the inner side. It is 0.61 m long, 0.15 m wide, and 0.02 m thick. It has a funnel-shaped thickening of 0.08 m with a round hollow to support the central post. There are four triangular holes at the corners of the cross-bar for cord-attachment. The cross-bar is in the IFAN Museum at Niamey and belongs to the tent described under B.2.g.6.

*From the Kel Ataram*:—

(9) A slightly curved cross-bar with a funnel-shaped thickening in which is carved a hollow to support the central post. There are four triangular holes for cord-attachment (Musée d'Ethnographie, Neuchâtel, No. 48.6.18).

It appears from the description of these specimens that the cross-bar of T-shaped posts are more or less curved and comparatively thin except at the middle where a hollow is carved for the post. The bulk of the cross-bars mentioned have holes for cord-attachment, and this seems to hold for all cross-bars used in Southern Tuareg groups. In Ahaggar cord-attachment is not always employed, but it is said to be extremely useful, as the tent may collapse owing to the very heavy winds so characteristic of desert climate. Thus it may seem as if the main function of the cords fastened to the cross-bar of the T-shaped post is to keep the latter upright.

[322] [331] I believe that cross-bars, and particularly those that are richly ornamented, are manufactured by blacksmiths and not by pastoral Tuareg, though they may perhaps also be made by noble women who among the Northern Tuareg are skilled in wood-work. In fact, it is claimed by Tuareg of the north that skin tents with T-shaped posts are the traditional type of dwelling of noble Tuareg and Tuareg of the *Iregenaten* tribe, which latter is said to descend partly from noble Tuareg (matrilineally) and from Arabs (patrilineally). The vassal Tuareg of Ahaggar say that T-shaped tents are not traditional to them. They use tents of B.2.f. type with pairs of forked poles carrying horizontal cross-bar, and this type seems to have supplanted skin tents of arch construction. It may happen that vassal Tuareg